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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/691,332

10/20/2003

Goro Tamai

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1376

7590

05/23/2006

CHRISTOPHER DEVRIES

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EXAMINER

BOTTORFF, CHRISTOPHER

ART UNIT

PAPER NUMBER

3618

DATE MAILED: 05/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/691,332	TAMAI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Christopher Bottorff	3618	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 March 2006.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

The amendment filed March 17, 2006 has been entered. Claims 1-11 are pending.

#### ***Claim Objections***

Claims 1-11 are objected to because of the following informalities: The term "switched" on the forth line of each of claims 1, 9, and 11, respectively, should be "switch." Also, the term "battery" on line 6 of claim 11 should be the plural "batteries" since each of the first and second batteries are being defined. Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 9 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 9 recites the limitation "said second battery" in line 8. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1, 2, 4, 5, 9, and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Bolz et al. US 6,919,648.

Bolz et al. disclose a vehicle powertrain control system comprising an electric motor drive system ISG and inverter 1, a first battery B1 coupled to the electric motor drive system, an electronically controlled switch S3 coupled to the first battery B1, and a second battery B2 coupled to the electronically controlled switch S3. See Figure 4. The first and second batteries B1, B2 are directly electrically coupled when electronically controlled switch S3 is closed. See Figure 4. Moreover, this direct electrical coupling occurs at least partially at DC/DC converter 3, and converter 3 steps-up or steps-down the voltage of one battery such that a common voltage level is present at the electrical

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coupling when switch S3 is closed. See column 9, lines 9-14. Also, the electronically controlled switch S3 applies power from the second battery B2 to supplement the first battery B1. See column 7, lines 16-20.

DC/DC converter 3 is coupled to the electronically controlled switch S3, wherein the electronically controlled switch S3 applies power from the DC/DC converter 3 to supplement the first and second batteries. That is, power in the DC/DC converter 3, which originates from second battery B2, will supplement first battery B1 when B2 is used to charge B1. See column 7, lines 16-20. Furthermore, power in the DC/DC converter 3, which originates from first battery B1 or the generator, will supplement the second battery B2 during charging of B2. See column 7, lines 13-16. DC/DC converter 3, first battery B1, and second battery B2 share a common electrical line of coupling along the conducting members that connect the batteries, switch S3, and DC/DC converter 3 together. This common electrical line of coupling serves as a common electrical reference and converges at DC/DC converter 3 when the electronically controlled switch S3 is closed. See Figure 4. Also, the first and second batteries comprise lead acid batteries and an inverter 1 is coupled to a motor of the motor drive system. See column 6, lines 27 and 44-45.

Claims 1 and 11 are rejected under 35 U.S.C. 102(e) as being anticipated by Goetze et al. US 6,718,927.

Goetze et al. disclose a vehicle powertrain control system comprising an electric motor drive system SG (starter generator SG inherently operates as a motor drive

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during starter operation), a first battery B1 coupled to the electric motor drive system SG, an electronically controlled switch S1 coupled to the first battery B1, and a second battery B2 couple to the electronically controlled switch S1. See the Figure. The first and second batteries B1, B2 are directly electrically coupled at a common voltage level (24/28V) and operate at substantially the same voltage (24/28V) at a common electrical connection when the electronically controlled switch S1 is closed. See column 2, line 62, through column 3, line 5. Also, the electronically controlled switch S3 applies power from the second battery B2 to supplement the first battery B1 such that the power of Battery B2 is provided in addition to the power of battery B1 for effective system operation in cold temperatures. See column 3, lines 5-10.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bolz et al. US 6,919,648 in view of Rose, Sr. US 6,472,790.

Bolz et al. do not disclose that the motor is an induction type motor. However, Rose, Sr. teaches the desirability of providing the motor portion of a starter generator as an induction type motor. See column 5, lines 22-28, and column 1, lines 20-21. From this teaching of Rose, Sr., providing the motor portion of the starter generator of Bolz et

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al. as an induction type motor would have been obvious to one of ordinary skill in the art at the time the invention was made. This would utilize a motor type with performance characteristics that are well established and reliable.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bolz et al. US 6,919,648 in view of Beyn US 4,687,983.

Bolz et al. do not disclose that the electronically controlled switch comprises a silicon conducting rectifier. However, Beyn teaches the desirability of providing an electronically controlled switch as a silicon conducting rectifier. See column 5, lines 40-57. From this teaching of Beyn, providing the electronically controlled switch of Bolz et al. as a silicon conducting rectifier would have been obvious to one of ordinary skill in the art at the time the invention was made. This would utilize a switch type with performance characteristics that are well established and reliable.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bolz et al. US 6,919,648 in view of Kodama et al. US 6,522,105.

Bolz et al. do not disclose that the electronically controlled switch comprises a transistor. However, Kodama et al. teach the desirability of providing an electronically controlled switch as a transistor. See column 13, lines 35-38 and 62-65. From this teaching of Kodama et al., providing the electronically controlled switch of Bolz et al. as a transistor would have been obvious to one of ordinary skill in the art at the time the

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invention was made. This would utilize a switch type with performance characteristics that are well established and reliable.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bolz et al. US 6,919,648 in view of Kenyon US 4,438,342.

Bolz et al. do not disclose that the electronically controlled switch comprises an electromechanical relay. However, Kenyon teaches the desirability of providing an electronically controlled switch as an electromechanical relay. See column 3, lines 63-68. From this teaching of Kenyon, providing the electronically controlled switch of Bolz et al. as an electromechanical relay would have been obvious to one of ordinary skill in the art at the time the invention was made. This would utilize a switch type with performance characteristics that are well established and reliable.

### ***Response to Arguments***

In regard to claims 1-10, Applicants' arguments filed March 17, 2006 have been fully considered but they are not persuasive.

Applicants assert that switch S3 of Bolz et al. cannot be characterized as being coupled to batteries B1 and B2 since the batteries are coupled by DC/DC converter 3. However, the batteries are "coupled" not only by DC/DC converter 3, but by numerous devices including switch S3 and the conducting lines that connect the batteries, switch S3, and DC/DC converter 3 together. The presence of DC/DC converter 3 along the line of coupling does not prevent switch S3 from also being coupled with the batteries.



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Thus switch S3 can be characterized as being coupled to the batteries. Furthermore, when converter 3 steps-up or steps-down the voltage of one battery to the voltage level of the other battery, a common voltage level is present at DC/DC converter 3. Thus, coupling of switch S3 and the batteries occurs at a common voltage level at DC/DC converter 3. In addition, the conducting lines that connect the batteries, switch S3, and DC/DC converter 3 together serve as a common electrical reference, as defined in claim 9, since these connecting lines are a medium in which electricity is present when switch S3 is closed.

In regard to claim 11, Applicants' arguments have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new grounds of rejection are made in view of Goetze et al., as described above.

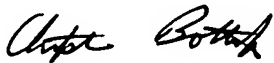
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher Bottorff whose telephone number is (571) 272-6692. The examiner can normally be reached on Mon.-Fri. 7:30 a.m. - 4:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Ellis can be reached on (571) 272-6914. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Chris Bottorff", written in a cursive style.

Christopher Bottorff